Claims

1. A method for characterising features of paper based on computer vision, **characterised** in that from pictures of numerous paper samples are extracted multi-dimensional features describing features of paper; the said features are entered as input into a learning classifier operating in an unsupervised manner, which produces a projection of the said data of each picture part in a low-dimension space, so that paper grades having close properties produce close projections in the low-dimension space and the classification results projected in the low-dimension space are used to aid classification.

2. A method for characterising paper as claimed in claim 1, **characterised** in that the said learning system operating in an unsupervised manner is an unsupervised clustering method or its simulation, for example, a SOM (Self-Organising Map).

3. A method for characterising paper as claimed in claim 1 or 2, **characterised** in that the feature describing the paper samples is a LBP or a bit pattern feature derived from it.

4. A method for characterising features of paper as claimed in any of the above claims, **characterised** in that according to the method, paper is in addition imaged and classified at different stages of its manufacture.

5. A method for characterising features of paper as claimed in claim 4, **characterised** in that the samples imaged at different stages of the manufacture are processed further by means of the unsupervised learning classifier in such a way that the classification will also concern the progressing of the manufacturing process.

6. A system as claimed in claim 5, **characterised** in that in addition to the image information, selected process parameters and/or measurement results are used as input.

7. A system for classifying paper using computer vision, **characterised** in that the system comprises imaging means, means for extracting the features describing paper quality from an image of the paper, and means for unsupervised learning classification into a space with a low-dimension space compared with the feature space.